Food Safety and Food Irradiation Education

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Foodborne Illness A Public Health Burden

- Estimated 76 million cases per year
- 1 in four Americans gets a foodborne illness each year
- 1 in 1000 Americans is hospitalized each year
- $6.5 billion in medical and other costs

The Burden of Foodborne Illness

3.5 million cases, 33,000 hospitalizations and 1600 deaths are caused by:

- ***Salmonella***
- ***E. coli* O157 and other STEC**
- ***Campylobacter***
- ***Listeria***
- ***Toxoplasma***

Current Capabilities

- *No vaccines for most pathogens*
- *Educating consumers, foodhandlers and producers - important, but not sufficient*

R. Tauxe CDC, 2000

Must re-engineering food production processes to reduce contamination

Robert Tauxe, Centers for Disease Control, 2001

Estimating Potential Benefits

- Assume that 50% of poultry, ground beef, pork and processed meats are irradiated
- Assume that each of these foods is the sources of 50% of foodborne E. coli O157, Campylobacter, Salmonella, Toxoplasma, and Listeria infections
- Then the benefit is a 25% reduction in morbidity and mortality due to each of these
- Leaves out the contribution of these foods to other diseases and use on other foods (fruits & vegetables)

Tauxe, CDC, 2001

Food irradiation: Potential annual public health benefits by specific pathogen

Pathogen	Prevented cases	Prevented hospitalizations	Prevented major complications	Prevente deaths
E. coli O157:H7 and other STEC	23,000	700	250 HUS cases	20
Campylobacter	500,000	2,600	250 GBS cases	25
Salmonella	330,000	4,000	6,000 RA cases	140
Listeria	625	575	60 miscarriages	125
Toxoplasma	28,000	625	100-1,000 cases Cong. toxo	94
Total	881,625	8,500	6,660 catastrophic illnesses	352

How consumers decide what to believe

- Message comes from a trustworthy, credibility source
- Determine if the message makes sense to them
- More believable if hear the message from multiple sources over time

Multi-State Educational Program

- Update Health Professional
- Informed Consumer
  - Directly
  - Through mass media
- Offer choice in the marketplace

Food Safety & Irradiation Project Collaborators

- Julie Albrecht, Nebraska
- Lynne Brown, Penn State
- Philip Crandall, U of Arkansas
- Sean Fox & Karen Penner, Kansas State
- April Mason, Purdue
- Bill Schafer, U of Minnesota
- Ron Schmidt, U of Florida
- Peggy Van Laanen & Britta Thompson, Texas A&M

Consumer Educational Materials

Video Tape and Brochure

- Accurate and science-based
- Information is relevant, understood and remembered
- Answers consumer questions

Information in Brochure

- Why irradiation is important

  Incidence of foodborne illness

  Irradiation offers extra protection

  Irradiation offers other benefits

Information in Brochure

- Why irradiation is important
- Definition of food irradiation
- Assurance of safety of irradiated foods

Information in Brochure

Response to potential questions

- health affects, radioactivity
- nutritional value, community safety
- how food should be handled
- irradiation’s unique benefits
- approval and endorsements

Informing the Consumer

Consumer is able to obtain science-based information

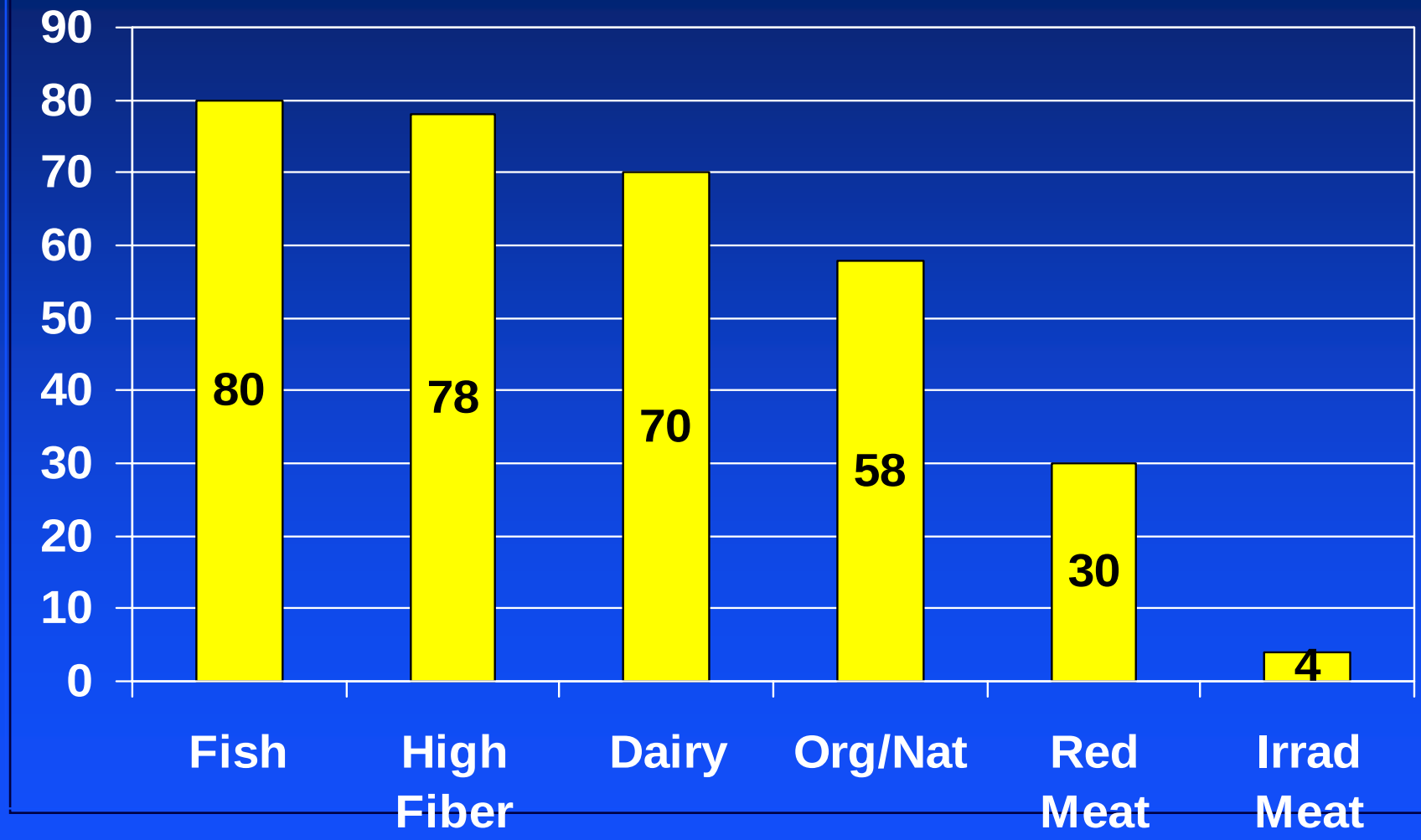
- Local meetings
- Web sources
- Supermarket flyers
- Media

Marketing Irradiated Food

- May 2002, Wegmens carries house brand fresh gd. beef chubs in all l62 supermarkets
- June 2002, Dairy Queen expands irradiated burgers to 43 stores in Minnesota
- 2002, irradiated ground beef in thousands of retail stores, fresh and frozen
- Irradiated papaya from Hawaii Pride in 1,000 retail outlets
- Irradiated beef and fruit in 1000 restaurants

Miscellaneous packaging including Huisken, Omaha Steaks, and Fairview Farms

Foods Associated with Healthy Eating



FMI Trends 2005

Effect of Negative Information

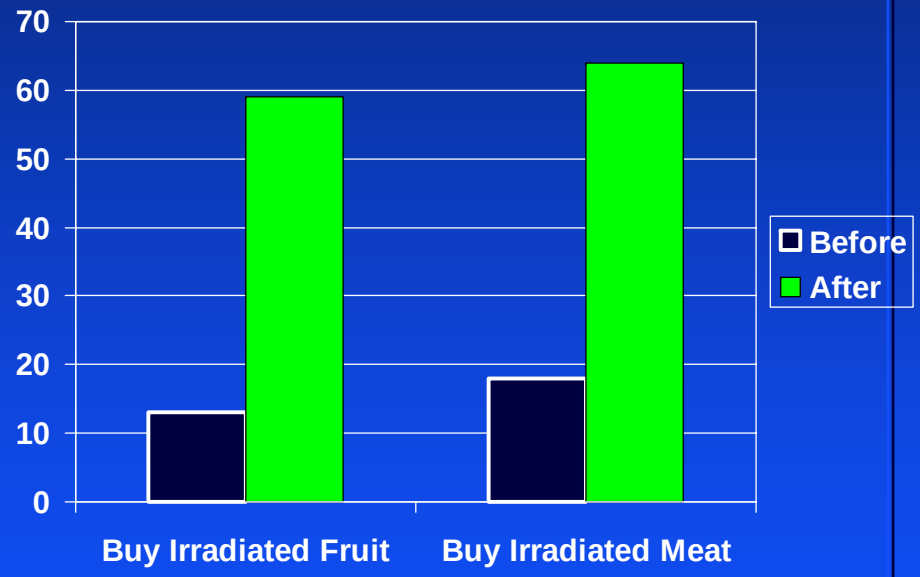
- 79% Selected irradiated chicken
- Given negative information
- Information countered – video and discussion
- 82% Selected irradiated chicken

Fox, 2002

Results of Ed Program-California

Purchase Intent of Irradiated Products

- 59% and 64% intended to buy irradiated fruits and meat, while only 13% and 18% were willing to buy before
- 36% of total participants specified that they would pay a 10% premium for irradiated meat



N Bhumiratana, C. M. Bruhn, and L. K. Belden

Educational Materials Available

- ***Food Safety First*** **curriculum and ed resources– Minnesota**

  http://www.cidrap.umn.edu/cidrap/content/fs/irradiation/index.html

- ***Food Irradiation: Behind the Headlines*****, Purdue University**

  http://cfs123-018.cfs.purdue.edu/extension/pdf/irradiation-form.pdf

  http://cfs123-018.cfs.purdue.edu/extension/pdf/irradiation-curriculum.pdf

- ***Frequently asked questions about Food Irradiation*****, English and Spanish**

  http://anrcatalog.ucdavis.edu/InOrder/Shop/Shop.asp